

### **REMARKS**

This is responsive to the Office Action dated April 24, 2007 and an Examiner's interview dated June 21, 2007. Claims 1-28, 30-54 are pending in the present application. Claims 1-28 and 30-54 are rejected. Claims 1, 8-12, 14, 18, 22-24, 27, 30-40, 44, 46, 49 and 51-54 have been amended to clarify the invention. Support for these amendments is found throughout the specification. Claim 29 has been canceled. Claims 1-28 and 30-54 remain pending in the application. For the reasons set forth fully below, Applicant respectfully submits that the claims as presented are allowable. Consequently, reconsideration, allowance, and passage to issue are respectfully requested.

Applicant includes a Petition for Extension of Time to extend the deadline for filing a response by (3) three-months from April 24, 2007 to July 24, 2007.

### **CLAIM REJECTIONS - 35 USC §112**

The Examiner has objected that claims 1, 18, 24, 27, 30, 31, 32, 33, 38, 50 and 52 are indefinite as they recite the limitation "state of the software object".

Applicant respectfully disagrees. Below is a definition of the term "state" from the *IEEE Standard Glossary of Software and Terminology*, IEEE Std 610.12-1990. This reveals that "state" may be defined as:

"The values assumed at a given instant by the variables that define the characteristics of the system, component or installation."

This is the second of the two definitions provided, and has been chosen because it is the operating definition, especially when discussing a computer system.

We also submit that the IEEE standard definition “dump” has relevance since it provides an example of an expert’s usage of the term “state” which is consistent with the interpretation that has been used in the instant application.

If the Examiner considers that it will assist interpretation, then we propose that the IEEE definition of “state” could be applied to the descriptive part of the specification.

### Discussion

After a helpful discussion with the Examiner, the claims have been amended to address his concerns.

To clarify the scope of claim 1, it has been amended. The amended claim 1 is provided in its entirety hereinbelow.

1. A computerized method of water marking a software object comprising the steps of:
  - a) determining a watermark
  - b) determining an input sequence
  - c) storing the watermark in the state of the software object so that the watermark becomes detectable by a computerized recognizer which examines the state of the software object when the software is being run with the input sequence.

To clarify the scope of the claim the term “recognizer” has been amended to recite a “computerized recognizer”, and that amendment has been made to claims 1, 8-9, 11-12, 14, 18, 22, 24, 27, 30-35, 37-40, 44 and 52.

The Examiner has stated that claims 23, 24, 33, 36, 39 and 53 are indefinite as they recite the limitation of “predetermined input”. The term “predetermined input” has been amended to recite “input determined during the watermarking process” throughout the claims to address this indefinite issue.

The Examiner has stated that claims 34, 37 and 40 are indefinite as they recite the limitation “at least one property”. To address these indefinite issues claims 34, 37 and 40 have been amended. They are provided in their entirety herein below.

34. A method of fingerprinting software comprising the steps of
  - a) providing a plurality of watermarked programs, the plurality of watermarked programs being obtained by choosing a graph-theoretic property, using the graph-theoretic property to define the class of graphs satisfying the property, choosing a plurality of graphs from the class to be used as watermarks, and embedding each chosen watermark into a software program,
  - b) providing a computerized recognizer capable of recognizing each of the embedded watermarks by examining the state of the software object when it is being executed,
  - c) providing an integrity tester which tests for the satisfaction of the chosen graph-theoretic property in a possibly-modified version of any of the plurality of watermarked programs.
37. A computer-readable medium including a program for watermarking software, the program including instructions for:
  - a) choosing a graph-theoretic property, using the graph-theoretic property to define the class of graphs satisfying the property, choosing a graph from the class to be used as a watermark, and embedding the chosen watermark into a software program,
  - b) providing a computerized recognizer capable of recognizing the embedded watermark by examining the state of the software object when it is being executed,
  - c) providing an integrity tester which tests for the satisfaction of the chosen graph-theoretic property in a possibly-modified version of the watermarked program.
40. A computer comprising:
  - a) a watermarked program obtained by choosing a graph-theoretic property, using the graph-theoretic property to define the class of graphs satisfying the property, choosing a graph from the class to be used as a watermark, and embedding the chosen watermark into a software program,
  - b) a computerized recognizer capable of recognizing the embedded watermark by examining the state of the software object when it is being executed,
  - c) an integrity tester which tests for the satisfaction of the chosen graph-theoretic property in a possibly-modified version of the watermarked program.

The Examiner has stated that claim 49 is indefinite in reciting the limitation “dynamically determined fashion.” The term has been amended to recite “dynamically determining a state variable” to address this indefinite issue.

The Examiner has stated that claim 51 is indefinite in reciting the limitation “special input.” The rejected term has been amended to recite “input determined during the watermarking process.”

Accordingly, Applicant respectfully submits that claims 1-28 and 30-54 are clear and definite and the rejection has been overcome.

CONCLUSION

Accordingly, in view of the above arguments, Applicant respectfully requests reconsideration and allowance of claims 1-28 and 30-54 as now presented.

Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,  
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Date

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